

34. (new) A capacitor fabrication method comprising:  
forming a first capacitor electrode over a substrate, the first electrode comprising silicon;  
atomic layer depositing a metal-containing conductive layer over the first electrode;  
forming a capacitor dielectric layer over the first electrode; and  
forming a second capacitor electrode over the dielectric layer.
35. (new) The method of claim 34 wherein the atomic layer deposited conductive layer is formed on the first electrode.
36. (new) The method of claim 34 wherein the atomic layer deposited conductive layer comprises elemental metal, a metal alloy, or a metal-containing compound.
37. (new) The method of claim 34 wherein the atomic layer deposited conductive layer comprises WN, WSiN, TaN, TiN, TiSiN, Pt, Pt alloys, Ir, Ir alloys, Pd, Pd alloys, RuO<sub>x</sub>, or IrO<sub>x</sub>.
38. (new) The method of claim 34 wherein at least one of the first or second electrodes comprise polysilicon and the dielectric layer comprises oxygen.
39. (new) The method of claim 34 wherein the dielectric layer comprises Ta<sub>2</sub>O<sub>5</sub>, ZrO<sub>2</sub>, WO<sub>3</sub>, Al<sub>2</sub>O<sub>3</sub>, HfO<sub>2</sub>, barium strontium titanate, or strontium titanate.

40. (new) A capacitor fabrication method comprising:

forming a first capacitor electrode over a substrate, the first electrode comprising silicon;

chemisorbing a layer of a first precursor at least one monolayer thick over the first electrode;

chemisorbing a layer of a second precursor at least one monolayer thick on the first precursor layer, a chemisorption product of the first and second precursor layers being comprised by a layer of a metal-containing conductive material;

forming a capacitor dielectric layer over the first electrode; and

forming a second capacitor electrode over the dielectric layer.

41. (new) The method of claim 40 wherein the first and second precursor layers each consist essentially of a monolayer.

42. (new) The method of claim 40 wherein the first and second precursors respectively comprise only one of the following pairs:  $WF_6/NH_3$ ,  $TaCl_5/NH_3$ ,  $TiCl_4/NH_3$ , tetrakis(dimethylamido)titanium/ $NH_3$ , ruthenium cyclopentadiene/ $H_2O$ ,  $IrF_5/H_2O$ , organometallic Pt/ $H_2O$ .

43. (new) The method of claim 40 wherein the atomic layer deposited conductive material is formed on the first electrode, further comprising chemisorbing additional alternating first and second precursor layers before forming the dielectric layer.

44. (new) The method of claim 40 wherein the atomic layer deposited conductive material comprises elemental metal, a metal alloy, or a metal containing compound
45. (new) The method of claim 40 wherein the conductive material comprises WN, WSiN, TaN, TiN, TiSiN, Pt, Pt alloys, Ir, Ir alloys, Pd, Pd alloys, RuO<sub>x</sub>, or IrO<sub>x</sub>.
46. (new) The method of claim 40 wherein at least one of the first or second electrodes comprises polysilicon and the dielectric layer comprises oxygen.
47. (new) The method of claim 40 wherein the dielectric layer comprises Ta<sub>2</sub>O<sub>5</sub>, ZrO<sub>2</sub>, WO<sub>3</sub>, Al<sub>2</sub>O<sub>3</sub>, HfO<sub>2</sub>, barium strontium titanate, or strontium titanate.